THE SPECIES OF LIMNEPHILUS FROM CENTRAL AMERICA AND HAITI

(TRICHOPTERA: LIMNEPHILIDAE)
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Five relic species of the large Holarctic genus *Limnephilus* are found in the mountains of Central America and Haiti. One of these is well known, but two others are based on unique types never adequately figured, one on a type now possibly lost, and one is here described as new. The other species from South America originally placed in this genus by early workers have now been transferred to another subfamily, the Dicosmoecinae. I should like to express my appreciation to Drs. P. J. Darlington, Jr., and H. E. Evans, who made it possible for me to study the types of Banks at Harvard.

Limnephilus toussainti Banks
(Figure 1)

Limnephilus toussainti Banks, 1924, Bull. Mus. Comp. Zool. 45: 439.

The presence of a limnephilid in the Antilles is most unexpected, as no other species of the family is known from the islands. The type may represent a mislabelled specimen; however, it may well be another of the Nearctic isolates known to occur on this island.

I recently studied this unique type so that I am able to present the following description and figures.

Male.—Fore tarsal segments subequal in length. Fore femur inflated basally and with many short dark setae on ventral surface and 1 short dark spur apically from inner angle. Fore tibia slightly bowed and with 2 very short dark spurs on outer surface apically. Forewings brownish with pale spots, especially abundant along posterior margin. No scabrous patch from posterior margin of eighth tergum. Ninth segment slightly inflated laterally. Clasper projecting from ninth segment as a finger-like process. Cercus long, with a somewhat sinuate tip curving dorsomesally; with a dark internal tooth near midlength. Tenth tergum elongate with tip black and upturned, basally widened and well developed internally. Aedeagus with lateral arms as long as central tube and capped by a sparse cluster of setae; tip of central tube unmodified.

Type.—Male, Port au Prince, Haiti (Mann.). MCZ type 14868.

Limnephilus discolor (Banks), new combination
(Figure 2)

Platyphylax discolor Banks, 1901, Trans. Amer. Ent. Soc. 27: 367; Ulmer, 1913, Deutsch. Ent. Zeitschr. 1913: 410.

Since its original description the species has been generally overlooked. Recently I was able to study the type and make notes and drawings of its genitalia which are presented here. The species is still known only from this unique type.

Male.—Basal segment of the fore tarsus ⅓ length of second segment. Forewing membrane uniformly pale brown, veins with prominent setae especially basally and posteriorly. Eighth tergum without a scabrous patch posteromesally. Ninth segment very broad laterally. Clasper projecting distinctly from posterior margin

of ninth segment, apex sinuately truncate. Cercus trianguloid, posterior margin nearly vertical and bearing a single strong tooth mesally. Tenth tergum low, extending no farther caudad than cerci, with a low, dark projection apicolaterally. Aedeagus with lateral arms half length of central tube, apex rounded and bearing a diffuse cluster of setae; central tube upturned distally, apex unmodified.

Type.—Male, Tacubaga, D. F., Mexico, September. MCZ type 11817.

Limnephilus hamifer Flint, new species
(Figure 3)

This species appears to be a close relative of *discolor*, but the male differs in numerous characters, especially those of the eighth tergum

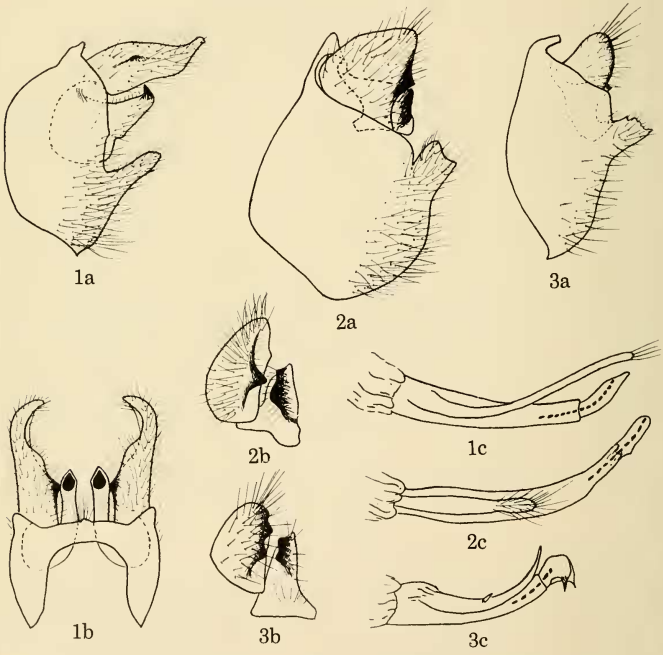

Fig. 1, **Limnephilus toussainti** Banks: a, male genitalia, lateral; b, same dorsal; c, aedeagus, lateral. Fig. 2, **Limnephilus discolor** (Banks): a, male genitalia, lateral; b, cercus and tenth tergite, posterior; c, aedeagus, lateral. Fig. 3, **Limnephilus hamifer**, new species: a, male genitalia, lateral; b, cercus and tenth tergite, posterior; c, aedeagus, lateral.

and aedeagus. The maculations of the forewings may resemble those of *L. solidus* (Hag.).

I have females of two species from Costa Rica and Guatemala, either of which may be the other sex of this species. But, because there is no way of definitely associating either with the type, I prefer to leave the designation of allotype until more material has accumulated.

Male.—Length of forewing 13 mm.; rather uniformly yellowish-brown. Forewings pale yellowish-brown with darker irrorations most noticeable along the veins, especially anally and at the anastomosis; membrane with many pale decumbent hairs, a few erect dark setae on veins basally and anally. Basal segment of fore tarsus about ⅓ length of second segment. Posterior margin of eighth tergum with a seabrous patch. Ninth segment slightly inflated laterally. Clasper projecting distinctly from posterior margin of ninth segment; apex slightly excised so as to form 4 points as seen from the posterior, one at each corner. Cercus trianguloid, posterior margin nearly vertical, black, and with several blunt teeth mesally. Tenth tergum low, extending no farther posteriad than cercus, with a low dark ridge apicodorsally. Aedeagus with lateral arms spine-like, upcurved, and with a short spine-like seta at midlength; central tube with apex produced into a pair of sharp decurved hooks laterally and a weaker hook mesally.

Type.—Holotype male, Mount Poas, C(osta) R(ica), March (Wm. Schaus). USNM type 64990.

Limnephilus frijole Ross

Limnephilus frijole Ross, 1944, Bull. Ill. Nat. Hist. Surv. 23(1): 282; Ross, 1949, Pan-Pacific Ent. 25: 122.

A male and female paratype of this well known species were recorded from Municipio de Galeana, Cerro Potosi, Mexico, by Ross (1944). It is also recorded from Texas, New Mexico, and California.

Limnephilus solidus (Hagen), new combination

Halesus solidus Hagen, 1861, Smiths. Misc. Coll. 4(1): 267; Ulmer, 1913, Deutsch. Ent. Zeitschr. 1913: 411.

This species remains known only from the original description of the female from Mexico. The type, if in existence, is not present in the Hagen material at the MCZ.

TREATMENT OF A RECREATION AREA LAKE FOR CONTROL OF BACKSWIMMERS

During the summer of 1962 a request was received for assistance on an insect problem in a small fresh-water lake at a day camp for girls located in a suburban area of Silver Spring, Maryland. The lake was being used for swimming instruction. The camp owner was concerned about severe biting attacks and wounds received by swimmers from a certain aquatic insect which often became trapped under their swimming suits.